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Section 23–5 Transport in Plants (pages 599–602)

Key Concepts

- How is water transported throughout a plant?
- How are the products of photosynthesis transported throughout a plant?

Water Transport (pages 599–601)

1. What combination of factors provides enough force to move water through the xylem tissue of even the tallest plant? _____

_____

_____

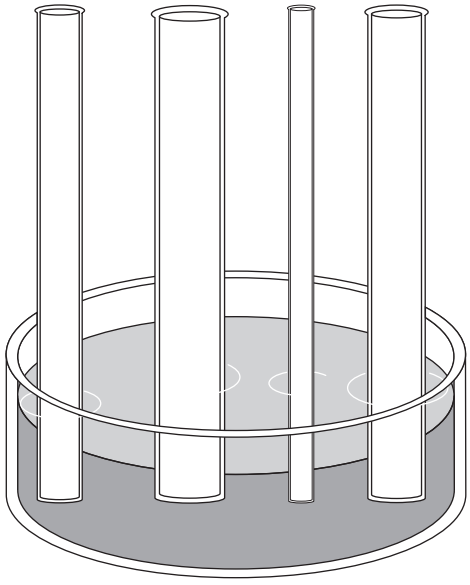
2. Complete the table about attraction between molecules.

ATTRACTION BETWEEN MOLECULES

Type of Attraction	Definition
Cohesion	
Adhesion	

3. The tendency of water to rise in a thin tube is called _____.

4. How does the thinness of a tube affect how high water will rise because of capillary action? Show your answer by drawing how high water would rise in each of the tubes on the illustration.



5. The tubelike structures of what two kinds of cells use capillary action to raise water above the level of ground?

a. _____ **b.** _____

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6. How do vessel elements form continuous tubes through which water can move freely?

_____

7. What causes the process known as transpiration pull? _____

_____

_____

_____

8. What normally keeps a plant's leaves and stems rigid? _____

_____

_____

9. High transpiration rates can lead to water loss that is severe enough to cause _____.

10. How does the loss of osmotic pressure in leaves slow down the rate of transpiration?

_____

_____

_____

Nutrient Transport (pages 601–602)

11. How is the water content of a leaf kept constant? _____

_____

_____

12. How does wilting help a plant to conserve water? _____

_____

_____

13. The movement of sugars out of leaves and through stems to fruits takes place in what kind of vascular tissue? _____

14. Is the following sentence true or false? Many plants pump food down into their roots for winter storage. _____

15. The hypothesis that considers plants in terms of where they produce and use materials from photosynthesis is called the _____.

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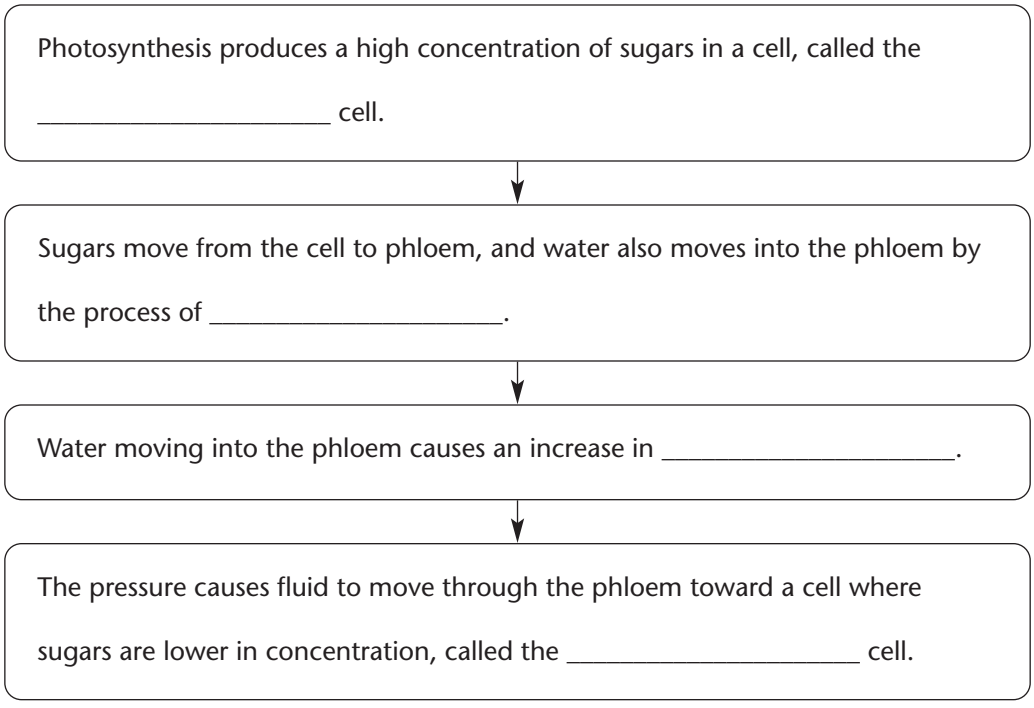
16. Complete the flowchart about the pressure-flow hypothesis.



Reading Skill Practice

When you read a section, taking notes can help you organize and remember the information. As you read or review Section 23–5, take notes by writing each heading and listing the main points under each heading. Do your work on a separate sheet of paper.